AtomBox Studio User's Guide

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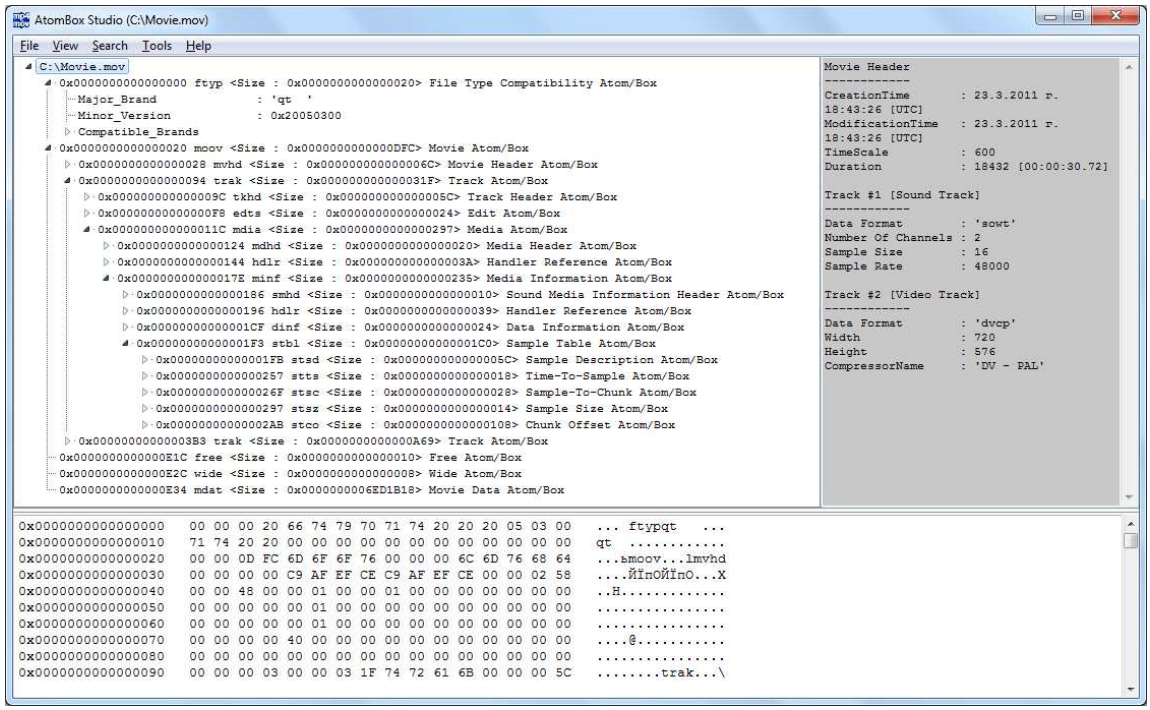
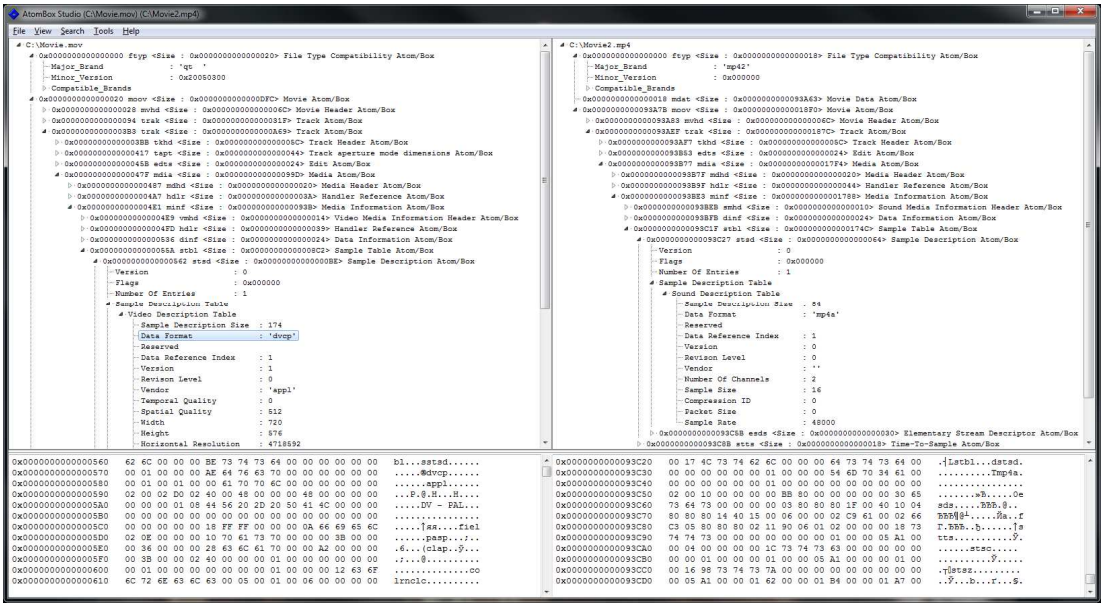
1. Overview

AtomBox Studio application provides the user with a visual representation of the **QuickTime**, **MP4**, **Fragmented MP4**, **3GPP**, **3GPP2 and Flash Video** file containers inner structure. A tree-view presents the detailed atom and box structure of the file, showing the inner hierarchy and full parameter list of the atoms and boxes. A separate hexadecimal data preview is available, enabled for automatic file data positioning on tree-view atom/box selection. Along with the presentation capabilities, the AtomBox Studio can perform multiple operations on the supported containers – like container validation, demultiplex, re-multiplex, atom/box extraction and merging, atoms/boxes and tracks enabling and disabling, etc. .



AtomBox Studio can work in tow general modes. The first Single Mode is available for single container file analysis and manipulation. The second mode is the Dual Mode, where the solution can be used for analysis and properties comparison of two container files.



The following container formats are supported:

- QuickTime Media File (.mov)
- MP4 Media File (.mp4, .m4v)
- Apple iPhone Ringtone Media File (.m4r)
- Audio Books and Podcast Media File (.m4a, .m4b)
- MP4 Protected Media File (.m4p)
- 3GPP Media File (.3gp)
- 3GPP2 Media File (.3g2)
- Microsoft Smooth Streaming Video Media File (.ismv)
- Microsoft Smooth Streaming Audio Media File (.isma)
- Flash Video Media File (.f4v, .f4f, .f4x)

The supported file formats can contain a wide variety of different video coded streams: MPEG-2, MPEG-4, AVC/H.264, Animation, DV, MJPEG; still graphic formats: TIFF, PICT, JPEG; and audio streams: PCM, AIFF, AAC.

1.1 General Features

- Visual representation of mov, mp4, fmp4, 3gp, 3g2, f4v and f4f file containers
- Hex data representation of the file
- Automatic hex positioning of the selected atom/box
- Export of file atom/box structure
- Append atom/box file
- User data appending and extraction
- Hex data editing of the selected atom/box
- Extraction of selected atom/box to a separate file
- Tracks demultiplexing
- Track disabling and enabling
- Atom/Box Renaming
- Tracks re-multiplexing
- mdat and moov atoms/boxes position switching
- Text selection and copy from both tree and hex views
- Command-line atom/box structure export – automation
- Dual-mode for two files parameters comparison
- Stream Frame Graph presentation
- QuickTime and MP4 based files validation – available in AtomBox Studio Pro and AtomBox Studio Ultimate
- AVC/H.264 video elementary stream validation – an option for AtomBox Studio Pro and available in AtomBox Studio Ultimate
- MPEG-2 video elementary stream validation – an option for AtomBox Studio Pro and available in AtomBox Studio Ultimate
- MPEG-4 video elementary stream validation – an option for AtomBox Studio Pro and available in AtomBox Studio Ultimate
- AAC audio elementary stream validation – an option for AtomBox Studio Pro and available in AtomBox Studio Ultimate

1.2 Supported atoms and boxes

This is the list with the supported atoms and boxes by the AtomBox Studio application.

co64	Chunk Offset (64 bit offset)
ctts	Composition Time To Sample
dinf	Data Information
dref	Data Reference
edts	Edit
elst	Edit List
hdlr	Handler Reference
mdhd	Media Header
mdia	Media
minf	Media Information
moov	Movie
mvhd	Movie Header
smhd	Sound Media Information Header
stbl	Sample Table
stco	Chunk Offset (32 bit offset)
stsc	Sample-to-Chunk
stsd	Sample Description
stss	Sync Sample
stsz	Sample Size
stts	Time-to-Sample
tkhd	Track Header
trak	Track
vmhd	Video Media Information Header
pnot	Preview
load	Track Loading Settings
keys	Metadata Item Keys
ilst	Metadata Item List
gmin	Base Media Info
gmhd	Base Media Information Header
ftyp	File Type Compatibility
ctab	Color Table
cslg	Composition Shift Least Greatest
clef	Track Clean Aperture Dimensions
colr	Color Parameter

enof	Track Encoded Pixels Dimensions
fiel	Field Parameter
mehd	Movie Extends Header
meta	Metadata
mfhd	Movie Fragment Header
mfra	Movie Fragment Random Access
mfro	Movie Fragment Random Access Offset
moof	Movie Fragment
mvex	Movie Extends
nmhd	Null Media Header
pasp	Pixel Aspect Ratio
pdin	Progressive Download Information
prof	Track Production Aperture Dimensions
sdtp	Independent and Disposable Samples
tapt	Track aperture mode dimensions
tfhd	Track Fragment Header
tfra	Track Fragment Random Access
traf	Track Fragment
tref	Track Reference Container
trex	Track Extends Defaults
trun	Track Fragment Run
wave	Wave Parameter
tcmi	Timecode Media Information
udta	User Data
esds	Elementary Stream Descriptor
sbgp	Sample To Group
avcC	AVC Decoder Configuration
sinf	Protection Scheme Info
schm	Scheme Type
frma	Format
hmhd	Hint Media Header
tims	Timescale Entry
tsro	Time Offset
snro	Sequence Offset
btrt	Bit Rate
clap	Clean Aperture
sidx	Segment Index
tfdt	Track Fragment Base Media Decode Time

pssh	Protection System Specific Header
saiz	Sample Auxiliary Information Sizes
saio	Sample Auxiliary Information Offsets
leva	Level Assignment
ssix	Subsegment Index
prft	Producer Reference Time
abst	Bootstrap Info
asrt	Segment Run Table
afrt	Fragment Run Table
afra	Fragment Random Access
auth	Author Metadata Tag
titl	Title Metadata Tag
dscp	Description Metadata Tag
cprt	Copyright Metadata Tag
rtmp	Adobe Mux Hint Sample Entry
amhp	Adobe Mux Hint Process
amto	Adobe Mux Time Offset
encv	Encrypted Video
enca	Encrypted Audio
encr	Encrypted Data
adkm	Adobe DRM Key Management System
ahdr	Adobe DRM Header
aprm	Standard Encryption Params
aeib	Encryption Information
akey	Key Information
flxs	Flash Access Params
adaf	Adobe DRM Access Unit Format
chan	Audio Channel Layout
vwid	View Identifier
mvci	Multiview Information
mvcg	Multiview Group
mvcC	MVC Decoder Configuration
styp	Segment Type Compatibility
tmcd	Timecode Sample Descriptor
schi	Scheme Information
uuid	UUID

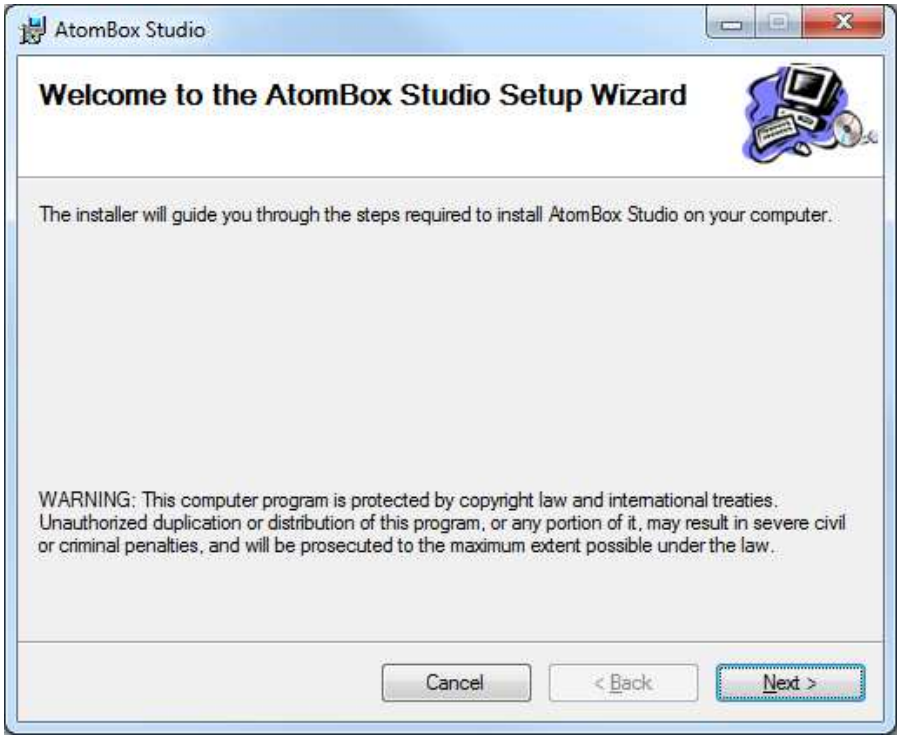
2. Installation

2.1 Installing AtomBox Studio

Before installing the **AtomBox Studio** solution, make sure that any previous version of the product has been uninstalled refer 2.2.

The installation package of **AtomBox Studio** is distributed in msi file. After downloading the file from the official Jongbel Media Solutions web site – www.jongbel.com, execute the installation by starting the msi file.

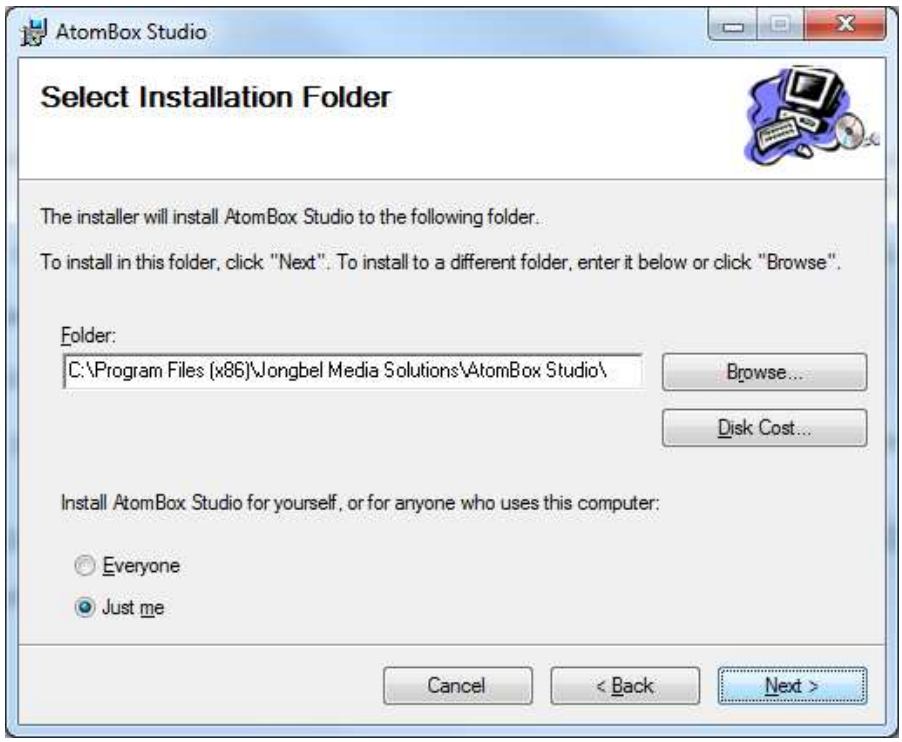
First a Welcome dialog pops up. Click "Next" in order to proceed.


AtomBox Studio
Welcome to the AtomBox Studio Setup Wizard
The installer will guide you through the steps required to install AtomBox Studio on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

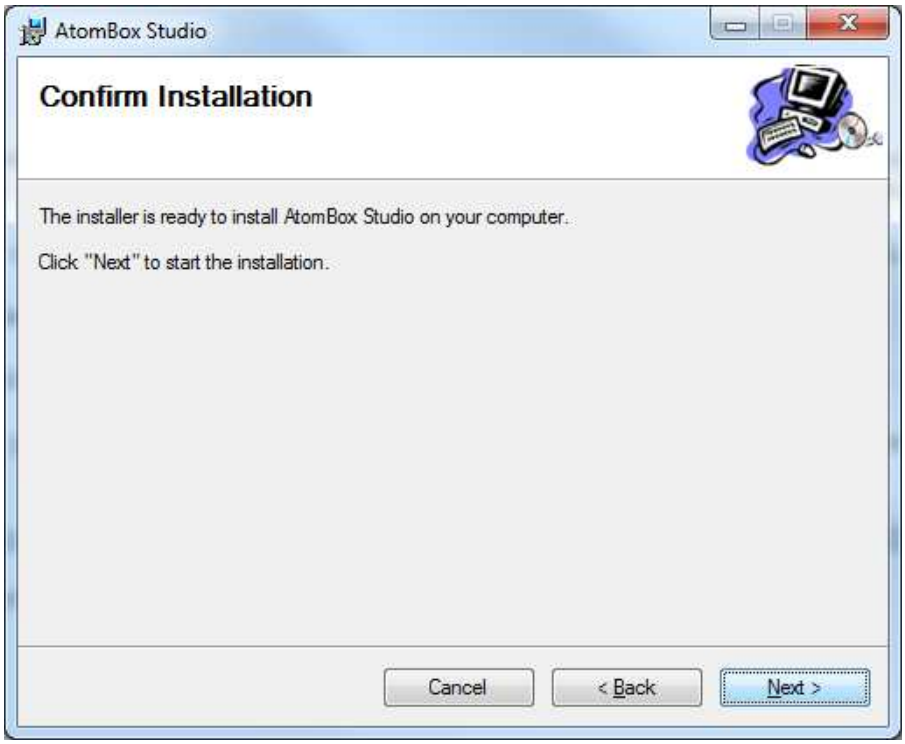
After this a License Agreement dialog pops up. Read the agreement carefully, select "I Agree" if you agree all the terms and click "Next" to proceed.

AtomBox Studio
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".
JONGBEL MEDIA SOLUTIONS
END USER LICENSE AGREEMENT, TERMS AND CONDITIONS
Trial Version
AtomBox Studio ("SOFTWARE PRODUCT") is not freeware. You may use SOFTWARE PRODUCT for evaluation purposes only. This version has full product functionality and is time limited. In order to acquire a fully functional version of SOFTWARE PRODUCT you must purchase a license ("LICENSED VERSION").
I Do Not Agree
I Agree
Cancel
< Back
Next >

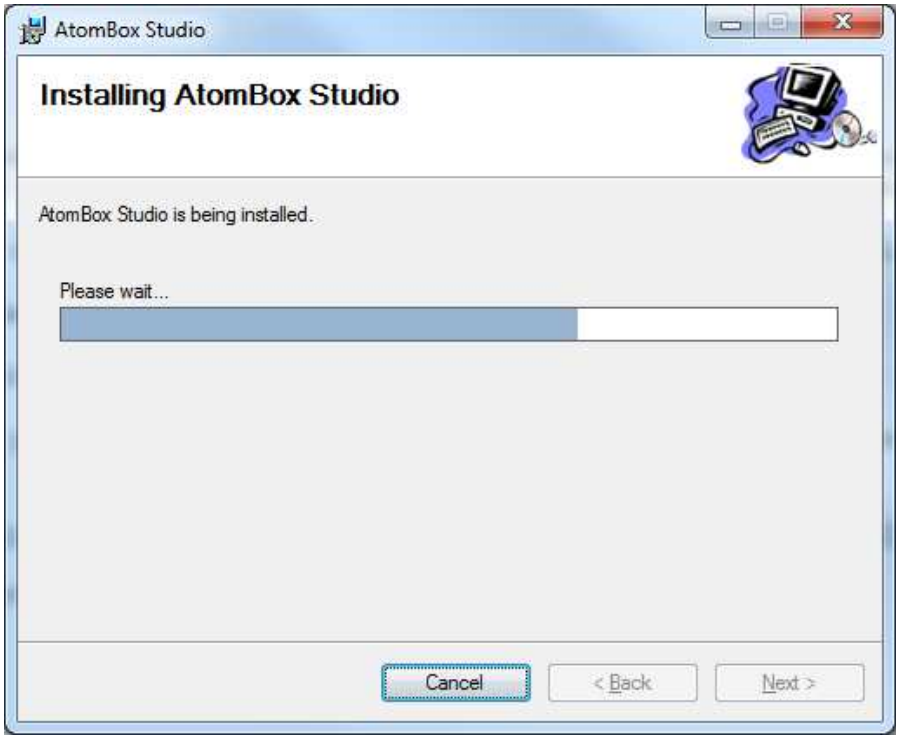
The next window shown specifies the installation product location and user access to the product. Change the destination product folder and user access if needed and click "Next" to proceed.


AtomBox Studio
Select Installation Folder
The installer will install AtomBox Studio to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files (x86)\Jongbel Media Solutions\AtomBox Studio\
Browse...
Disk Cost...
Install AtomBox Studio for yourself, or for anyone who uses this computer:
Everyone
Just me
Cancel
< Back
Next >

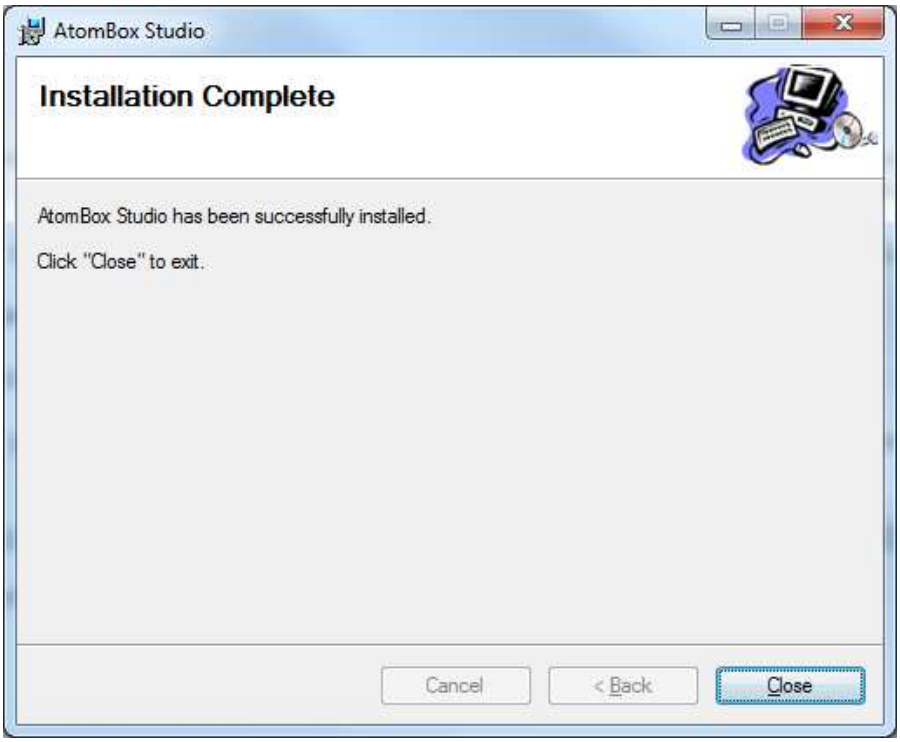
The next dialog is a confirmation dialog. Confirm by clicking "Next" in order to start the installation procedure.


AtomBox Studio
Confirm Installation
The installer is ready to install AtomBox Studio on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

While the product is being installed an "Installing" window shows the installation progress. Wait until the product is being installed.



At the end an "Installation Complete" dialog pops up, which denotes the successful AtomBox Studio installation. Click "Close" to finalize the process.



2.2 Uninstalling AtomBox Studio

The application can be removed opening the Control Panel – Programs and Features. Select the **AtomBox Studio** application and click Uninstall.

3. Functions

The following functions are available from the application **File** menu.

Open File – Opens a file open dialog box for selecting media file for loading. The product can load only files from the supported file container list.

Open File First View – Opens a file open dialog box for selecting media file for loading in the first/left view. The product can load only files from the supported file container list. The function is available only in dual mode.

Open File Second View – Opens a file open dialog box for selecting media file for loading in the second/right view. The product can load only files from the supported file container list. The function is available only in dual mode.

Close File – Closes the opened file and clears the tree and hex views.

Close File First View – Closes the opened file and clears the tree and hex views in the first/left view. The function is available only in dual mode.

Close File Second View – Closes the opened file and clears the tree and hex views in the second/right view. The function is available only in dual mode.

Reload File – Reloads the currently opened file and refreshes the tree and hex views. The function can be used when the file has been edited from inside the application or from a third party product, while the file is loaded.

Reload File First View – Reloads the currently opened file and refreshes the tree and hex views in the first/left view. The function can be used when the file has been edited from inside the application or from a third party product, while the file is loaded. The function is available only in dual mode.

Reload File Second View – Reloads the currently opened file and refreshes the tree and hex views in the second/right view. The function can be used when the file has been edited from inside the application or from a third party product, while the file is loaded. The function is available only in dual mode.

Export Structure – Exports the opened media file structure, with all atoms and boxes inner parameter values into a text file. The exported text file represents a full description of the selected file. A file save dialog box is opened for selecting the target text file name. In dual mode the function exports the structure of the file loaded in the selected first/left or second/right view.

Properties – Opens the properties dialog box of the application. (See "Setting Up" section).

Exit – Closes the application.

The following functions are available from the application **View** menu.

Full Expand – Expands the currently loaded media file tree view. In dual mode the function is applied to the selected first/left or second/right view.

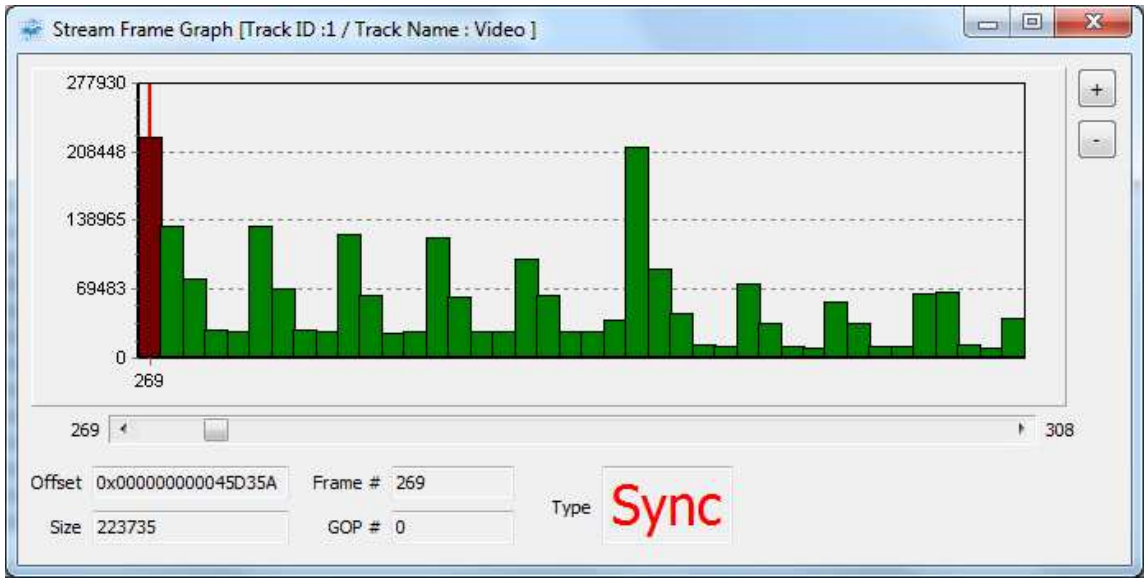
Full Collapse – Collapses the currently loaded media file tree view. In dual mode the function is applied to the selected first/left or second/right view.

Switch To Dual Mode / Switch To Single Mode – Switches between the single and dual mode of AtomBox Studio. The single mode is used for single

file analysis and manipulation. The dual mode is used for two files analysis and properties comparison, where both files are placed side by side for convenience in the comparison process.

Show Quick View / Hide Quick View – Shows or hides the "Quick View" panel. This panel contains a short description about the loaded file and all of its tracks. The "Quick View" is available in Single Mode only.

Stream Frame Graph – Shows or hides the Stream Frame Graph form. The form shows the selected track samples into a graph. After opening the form it is required to select any of the tracks in the loaded file, to right-click on the track in the tree view and to select "Stream Frame Graph" option from the popup menu. The track samples will be loaded into the Stream Frame Graph form.



The caption of the form specifies the track ID and the track name. At the center of the form is placed the chart, where all the samples from the selected track are placed with their sizes and types. The video samples can be of "Sync" type, standing for sync points, and "Ref", standing for reference points. The sample type is specified at the bottom "Type" box. The scroll box below the chart can control the current samples stream position. The "Offset" specifies the sample offset in bytes, from the beginning of the file. The "Size" specifies the sample size in bytes. The

"Frame" specifies the sample number in the stream. The "GOP" specifies the GOP number if present. It is possible to zoom-in and to zoom-out the samples chart with the "+" and "-" buttons on the right side of the chart.

The following functions are available from the application **Search** menu.

Find Text In Structure – Searches for text in the selected tree view. If the text is found the tree view is positioned to the node, where the text has been found. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

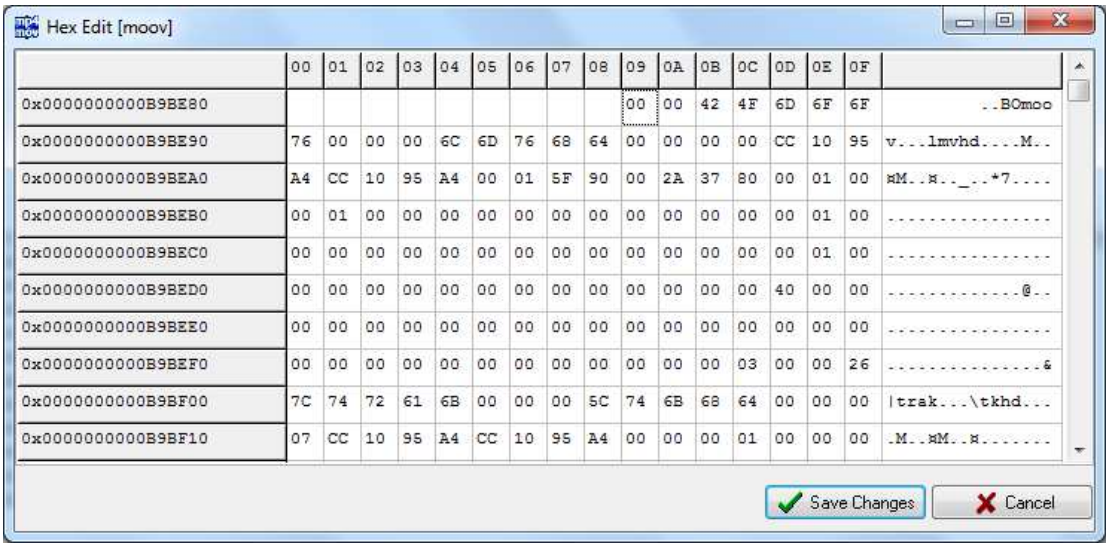
Find Text In Bitstream – Searches for text in the selected hex view. If the text is found the hex view is positioned to the offset, where the text has been found. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Find Next – Repeats the text search in the selected tree view. If the text is found the tree view is positioned to the node, where the text has been found. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Go To Hex Offset – Positions the Hex view of the selected file on the pre-specified offset. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

The following functions are available from the application **Tools** menu.

Hex Edit Selected Atom/Box – Opens a Hex Exit dialog box for byte hex manipulating the binary data of the selected atom/box from the tree view.



	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	
0x00000000000B9BE80										00	00	42	4F	6D	6F	6F	..BOmoo
0x00000000000B9BE90	76	00	00	00	6C	6D	76	68	64	00	00	00	00	CC	10	95	v...lmvhd....M..
0x00000000000B9BEA0	A4	CC	10	95	A4	00	01	5F	90	00	2A	37	80	00	01	00	¤M..¤.._..*7....
0x00000000000B9BEB0	00	01	00	00	00	00	00	00	00	00	00	00	00	00	01	00	.....
0x00000000000B9BEC0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	01	00	.....
0x00000000000B9BED0	00	00	00	00	00	00	00	00	00	00	00	00	00	40	00	00	.....@..
0x00000000000B9BEE0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0x00000000000B9BEF0	00	00	00	00	00	00	00	00	00	00	00	00	03	00	00	26	.....&
0x00000000000B9BF00	7C	74	72	61	6B	00	00	00	5C	74	6B	68	64	00	00	00	|trak...\tkhd...
0x00000000000B9BF10	07	CC	10	95	A4	CC	10	95	A4	00	00	00	01	00	00	00	.M..¤M..¤.....

By double-clicking on the byte cell, the form will enter into byte editing mode, making it possible to change the value of the selected byte cell. The byte cells with values different from the values of the original file are marked in red. **Save Changes** button will save the altered bytes to the original file. **Cancel** button will exit the form, without altering the original file.

This function allows the solution users to practically manipulate the file structure in any possible way. It can be used for manually removing, renaming, splitting, resizing atom/boxes. After editing manipulation, the file still must meet the respective file format specification in order to be able to operate as expected.

In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Extract Selected Atom/Box – Extracts the selected atom/box from the tree view into a separate file. A Save File dialog box is opened for selecting the destination file name.

Extracting separate atom/box or group of atoms/boxes of one media file, enables easy transfer for further manipulation or examination of the essential header part of the media file.

In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Extract Selected Atom/Box Data – Extracts the selected atom/box data from the tree view into a separate file. A Save File dialog box is opened for selecting the destination file name. The function extracts only the content of the atom/box, without the atom/box type and size.

In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Append Extracted Atom/Box – Appends previously extracted atom to the currently opened file. It is recommended to append atom/box files extracted only with the "Extract Selected Atom/Box" function, which fully comply with the respective file container standard.

The simplicity of the QuickTime-based and ISO file-based media files makes it easy to append at the end of the file any user data atom/box.

In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Append Data To New Atom/Box – Appends any binary file to the currently opened file. The binary data file can be any user data file. The data from the file will be appended at the end of the opened file, encapsulated into a separate atom/box. The source file must be specified and the name of the atom/box, when calling this function.

In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Disable Selected Track – Disables the selected track inside the moov atom/box. The function is useful for analyzing broken media files with bad media content or incorrect track header. Note that the function will permanently disable the track of your media file, so make sure that you

apply this function only to temporary copies of your original media files. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Enable Selected Atom/Box As Track – Enables the selected atom/box, inside the root moov layer, as track atom/box. It is recommended to apply the track enabling function only on previously disabled tracks by the "Disable Selected Track" function. The function is useful for analyzing broken media files with bad media content or incorrect track header. Note that the function will permanently alter the track information of your media file, so make sure that you apply this function only to temporary copies of your original media files. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Rename Selected Atom/Box – Renames the selected atom/box from the tree view. A dialog box with the current atom/box name is opened, allowing the name to be changed. The names of the atoms/boxes are in FOURCC format, containing exactly 4 characters. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Demultiplex All Tracks – Demultiplexes all tracks of the opened media file to its elementary streams. A save file dialog box is opened for selecting the main destination file name. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Demultiplex Selected Track – Demultiplexes the selected track of the opened media file to its elementary stream. A save file dialog box is opened for selecting the main destination file name. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Remultiplex All Tracks – Remultiplexes all tracks of the opened media file. The remultiplexing process separates all tracks into media files having the same container type as the originally opened media file. A save file dialog box is opened for selecting the main destination file name. In dual mode

the function is applied to the file loaded in the selected first/left or second/right view.

Remultiplex Selected Track – Remultiplexes the selected track from the opened media file. The remultiplexing process separates the selected track into media file having the same container type as the originally opened media file. A save file dialog box is opened for selecting the destination file name. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

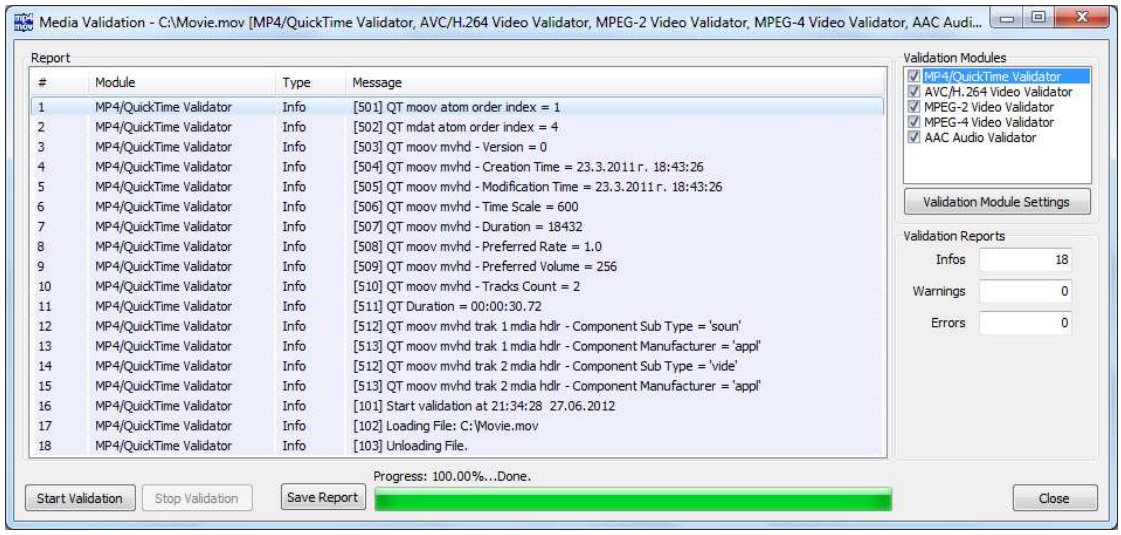
Place moov In Front Of mdat Atom/Box – Remultiplexes the currently opened file into a new file, placing the moov header atom/box in front of the mdat atom/box and recalculates all internal offset structures. Having the moov atom/box in front of the mdat atom/box enables the media file to be used in progressive download media solutions. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Place mdat In Front Of moov Atom/Box – Remultiplexes the currently opened file into a new file, placing the mdat header atom/box in front of the moov atom/box and recalculates all internal offset structures. In dual mode the function is applied to the file loaded in the selected first/left or second/right view.

Note that in Dual Mode all functions from Tools menu are applied to the file loaded in the selected first/left or second/right view.

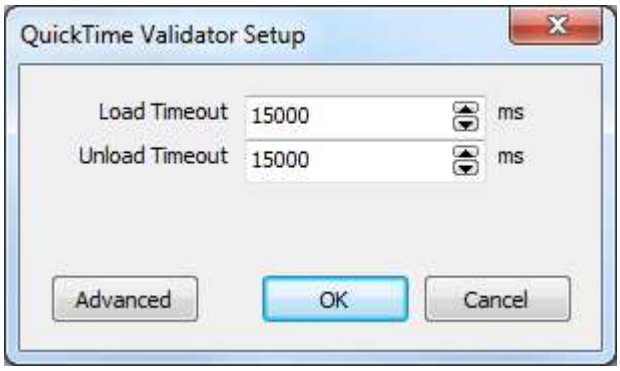
Validation – Performs validation and verification of the Quicktime and MP4 based container. The function opens the media validation dialog from where the validation process can be started.

In dual mode the function is applied to the file loaded in the selected first/left or second/right view.


Media Validation - C:\Movie.mov [MP4/QuickTime Validator, AVC/H.264 Video Validator, MPEG-2 Video Validator, MPEG-4 Video Validator, AAC Audi...
Report
Module Type Message
1 MP4/QuickTime Validator Info [501] QT moov atom order index = 1
2 MP4/QuickTime Validator Info [502] QT mdat atom order index = 4
3 MP4/QuickTime Validator Info [503] QT moov mvhd - Version = 0
4 MP4/QuickTime Validator Info [504] QT moov mvhd - Creation Time = 23.3.2011 г. 18:43:26
5 MP4/QuickTime Validator Info [505] QT moov mvhd - Modification Time = 23.3.2011 г. 18:43:26
6 MP4/QuickTime Validator Info [506] QT moov mvhd - Time Scale = 600
7 MP4/QuickTime Validator Info [507] QT moov mvhd - Duration = 18432
8 MP4/QuickTime Validator Info [508] QT moov mvhd - Preferred Rate = 1.0
9 MP4/QuickTime Validator Info [509] QT moov mvhd - Preferred Volume = 256
10 MP4/QuickTime Validator Info [510] QT moov mvhd - Tracks Count = 2
11 MP4/QuickTime Validator Info [511] QT Duration = 00:00:30.72
12 MP4/QuickTime Validator Info [512] QT moov mvhd trak 1 mdia hdlr - Component Sub Type = 'soun'
13 MP4/QuickTime Validator Info [513] QT moov mvhd trak 1 mdia hdlr - Component Manufacturer = 'appl'
14 MP4/QuickTime Validator Info [512] QT moov mvhd trak 2 mdia hdlr - Component Sub Type = 'vide'
15 MP4/QuickTime Validator Info [513] QT moov mvhd trak 2 mdia hdlr - Component Manufacturer = 'appl'
16 MP4/QuickTime Validator Info [101] Start validation at 21:34:28 27.06.2012
17 MP4/QuickTime Validator Info [102] Loading File: C:\Movie.mov
18 MP4/QuickTime Validator Info [103] Unloading File.
Validation Modules
MP4/QuickTime Validator
AVC/H.264 Video Validator
MPEG-2 Video Validator
MPEG-4 Video Validator
AAC Audio Validator
Validation Module Settings
Validation Reports
Infos 18
Warnings 0
Errors 0
Progress: 100.00%...Done.
Start Validation
Stop Validation
Save Report
Close

Once the Media Validation dialog is opened, the validation process can be started by pressing the "Start Validation" button. During the validation, the process can be stopped by pressing the "Stop Validation" button. The validation Report table contains four columns. The first column is the index of the validation report starting from 1. The second column denotes the validation module name. At this point AtomBox Studio supports MP4/QuickTime Validator, AVC/H.264 Video Validator, MPEG-2 Video Validator, MPEG-4 Video Validator and AAC Audio Validator modules. The third column denotes each report type, which can be "Info" for informational report, "Warning" for warning report and "Error" for error report. The fourth column contains the Validation ID and the report message. The button "Save Report" saves the current report into a XML validation report file. The XML validation report file can be used for integration with third-party systems. "Validation Reports" box represents the information about the total informational, warning and error reports in the current validation.

The button "Validation Module Settings" opens the validation module settings dialog.

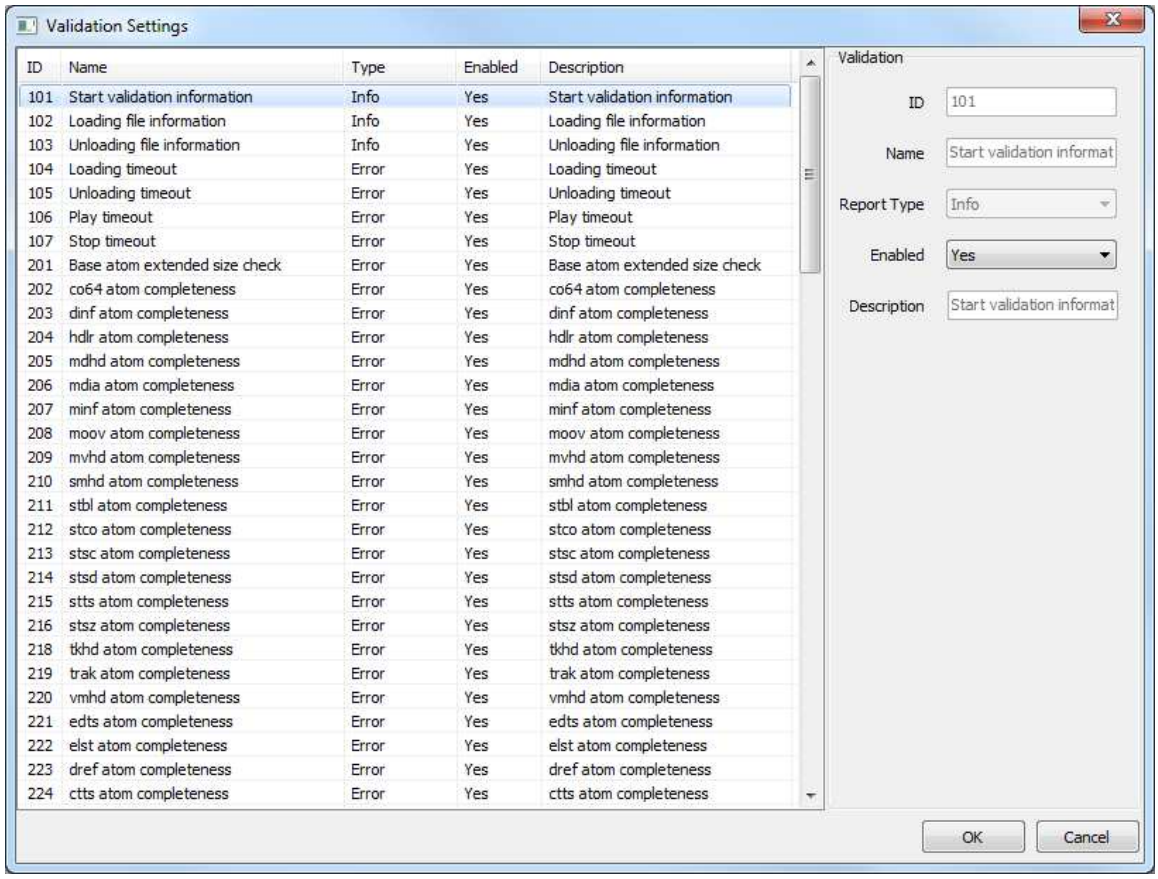


From the validation module settings dialog it is possible to control the loading and unloading timeout.

Load Timeout denotes the timeout, in milliseconds, for the media file loading process.

Unload Timeout denotes the timeout, in milliseconds, for the media file unloading process.

The advances settings are also accessible from this dialog by pressing the "Advanced" button.


Validation Settings
ID Name Type Enabled Description
101 Start validation information Info Yes Start validation information
102 Loading file information Info Yes Loading file information
103 Unloading file information Info Yes Unloading file information
104 Loading timeout Error Yes Loading timeout
105 Unloading timeout Error Yes Unloading timeout
106 Play timeout Error Yes Play timeout
107 Stop timeout Error Yes Stop timeout
201 Base atom extended size check Error Yes Base atom extended size check
202 co64 atom completeness Error Yes co64 atom completeness
203 dinf atom completeness Error Yes dinf atom completeness
204 hdlr atom completeness Error Yes hdlr atom completeness
205 mdhd atom completeness Error Yes mdhd atom completeness
206 mdia atom completeness Error Yes mdia atom completeness
207 minf atom completeness Error Yes minf atom completeness
208 moov atom completeness Error Yes moov atom completeness
209 mvhd atom completeness Error Yes mvhd atom completeness
210 smhd atom completeness Error Yes smhd atom completeness
211 stbl atom completeness Error Yes stbl atom completeness
212 stco atom completeness Error Yes stco atom completeness
213 stsc atom completeness Error Yes stsc atom completeness
214 stsd atom completeness Error Yes stsd atom completeness
215 stts atom completeness Error Yes stts atom completeness
216 stsz atom completeness Error Yes stsz atom completeness
218 tkhd atom completeness Error Yes tkhd atom completeness
219 trak atom completeness Error Yes trak atom completeness
220 vmhd atom completeness Error Yes vmhd atom completeness
221 edts atom completeness Error Yes edts atom completeness
222 elst atom completeness Error Yes elst atom completeness
223 dref atom completeness Error Yes dref atom completeness
224 ctts atom completeness Error Yes ctts atom completeness
Validation
ID 101
Name Start validation informat
Report Type Info
Enabled Yes
Description Start validation informat
OK
Cancel

From the Validation Settings dialog it is possible to control all validation procedures. All validation procedures can be Disabled/Enabled and the report type of some can be switched to "Info", "Warning" or "Error" depending on each custom workflow. The validation customization allows easy integration of the product in every workflow.

The button "Save Report" saves the validation report into XML validation report file, which allows integration with third party systems.

The button "Close" closes the Media Validation dialog.

For more information about the validation checks go to Chapter 6.

The following functions are available from the application **Help** menu.

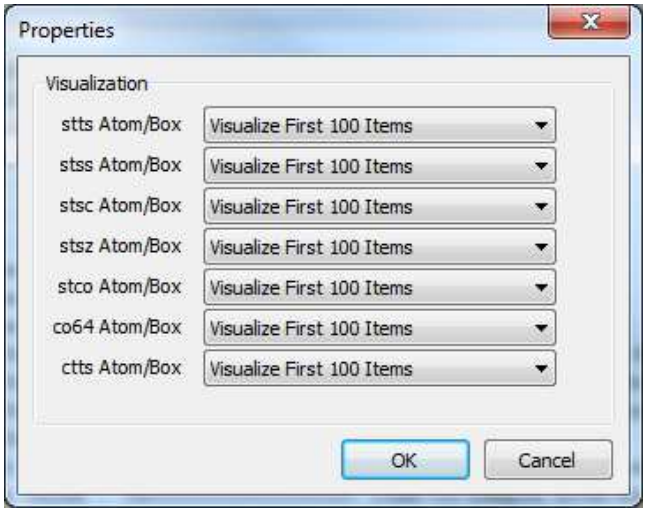
Registration – Opens the product registration form. This function is available only in the full licensed version of the product.

Check For Updates – Enables/Disables automatic check for updates.

About – Opens the About dialog box of the product.

4. Setting Up

From the **File** menu open **Properties** to set the product configuration settings.



From the Visualization group it is possible to control the number of visualized items in each of the following atoms/boxes: stts, stss, stsc, stsz, stco, c64, ctts. There are three options for visualizing the items of each of these atoms:

Visualize All Items – visualizes all items from the selected atom/box.

Visualize First 100 Items – visualizes only the first 100 items from the selected atom/box.
Don't Visualize Items – doesn't visualize any items from the selected atom/box.

Number of visualized items can drastically influence the loading and visualizing time of one media file. It is recommended that all atoms are set to visualize 100 items, especially when using with huge media files.

5. Automation Workflow

Now it is possible to use the AtomBox Studio in automated workflows for automatic media file structure generation. This functionality is available, when using the solution as a command prompt application.

The following command line parameters are available:

"-dump_txt" : defines text dump of the media file structure operation.
"-i" : defines an input media file.
"-o" : defines an output text file.

Sample command line for dumping a media file structure into a text log file:

"AtomBoxStudio.exe -dump_txt -i C:\Movie.mov -o C:\Movie.txt"

Note that the command line access of the application is available only if the product is fully registered.

6. Validation

The validation procedure performs a validation of the QuickTime container, according to the QuickTime File Format specification from Apple, all MP4 based containers according to the ISO/IEC 14496-12/14, 3GPP streams, fragmented MP4, Smooth Streaming and MPEG-DASH. Stream gaps, incorrect atom structures, missing header atoms can be detected with this validation module. The QuickTime/MP4 validation is included in AtomBox Studio Pro and AtomBox Studio Ultimate. AVC/H.264, MPEG-2, MPEG-4, AAC are optional validation modules supported by the AtomBox Studo Pro and are included in the AtomBox Studio Ultimate.

6.1. QuickTime and MP4 Validation

The following validation checks are available for QuickTime/MP4 validation module:

ID : 101
Name : 'Start validation information'
Type : Info
Description : Reports information on file validation start.

ID : 102
Name : 'Loading file information'
Type : Info
Description : Reports information on file load.

ID : 103
Name : 'Unloading file information'
Type : Info
Description : Reports information on file unload.

ID : 104
Name : 'Loading timeout'

Type : Error
Description : Reports load timeout if the loading time is greater than the maximum loading time specified in the main property page of the validation module.

ID : 105
Name : 'Unloading timeout'
Type : Error
Description : Reports unload timeout if the unloading time is greater than the maximum unloading time specified in the main property page of the validation module.

ID : 201
Name : 'Base atom/box extended size check'
Type : Error
Description : Reports invalid atom/box extended size value.

ID : 202
Name : 'co64 atom/box completeness'
Type : Error
Description : Reports incomplete c064 atom/box.

ID : 203
Name : 'dinf atom/box completeness'
Type : Error
Description : Reports incomplete dinf atom/box.

ID : 204
Name : 'hdlr atom/box completeness'
Type : Error
Description : Reports incomplete hdlr atom/box.

ID : 205
Name : 'mdhd atom/box completeness'
Type : Error

Description : Reports incomplete mdhd atom/box.

ID : 206
Name : 'mdia atom/box completeness'
Type : Error
Description : Reports incomplete mdia atom/box.

ID : 207
Name : 'minf atom/box completeness'
Type : Error
Description : Reports incomplete minf atom/box.

ID : 208
Name : 'moov atom/box completeness'
Type : Error
Description : Reports incomplete moov atom/box.

ID : 209
Name : 'mvhd atom/box completeness'
Type : Error
Description : Reports incomplete mvhd atom/box.

ID : 210
Name : 'smhd atom/box completeness'
Type : Error
Description : Reports incomplete smhd atom/box.

ID : 211
Name : 'stbl atom completeness'
Type : Error
Description : Reports incomplete stbl atom/box.

ID : 212
Name : 'stco atom/box completeness'
Type : Error

Description : Reports incomplete stco atom/box.

ID : 213
Name : 'stsc atom/box completeness'
Type : Error
Description : Reports incomplete stsc atom/box.

ID : 214
Name : 'stsd atom/box completeness'
Type : Error
Description : Reports incomplete stsd atom/box.

ID : 215
Name : 'stts atom/box completeness'
Type : Error
Description : Reports incomplete stts atom/box.

ID : 216
Name : 'stsz atom/box completeness'
Type : Error
Description : Reports incomplete stsz atom/box.

ID : 218
Name : 'tkhd atom/box completeness'
Type : Error
Description : Reports incomplete tkhd atom/box.

ID : 219
Name : 'trak atom/box completeness'
Type : Error
Description : Reports incomplete trak atom/box.

ID : 220
Name : 'vmhd atom/box completeness'
Type : Error

Description : Reports incomplete vmhd atom/box.

ID : 221
Name : 'edts atom/box completeness'
Type : Error
Description : Reports incomplete edts atom/box.

ID : 222
Name : 'elst atom/box completeness'
Type : Error
Description : Reports incomplete elst atom/box.

ID : 223
Name : 'dref atom/box completeness'
Type : Error
Description : Reports incomplete dref atom/box.

ID : 224
Name : 'ctts atom/box completeness'
Type : Error
Description : Reports incomplete ctts atom/box.

ID : 301
Name : 'Sound descriptor atom/box completeness'
Type : Error
Description : Reports incomplete sound descriptor atom/box.

ID : 302
Name : 'Timecode descriptor atom/box completeness'
Type : Error
Description : Reports incomplete timecode descriptor atom/box.

ID : 303
Name : 'Video descriptor atom/box completeness'
Type : Error

Description : Reports incomplete video descriptor atom/box.

ID : 401
Name : 'Atom type read on end of file check'
Type : Error
Description : Reports incomplete atom/box reading atom/box type on end of file.

ID : 402
Name : 'Atom completeness on end of file check'
Type : Error
Description : Reports incomplete atom/box on end of file.

ID : 501
Name : 'moov atom/box order index information'
Type : Info
Description : Reports the moov atom/box position index in the main atom/box.

ID : 502
Name : 'mdat atom/box order index information'
Type : Info
Description : Reports the mdat atom/box position index in the main atom/box.

ID : 503
Name : 'mvhd atom/box version information'
Type : Info
Description : Reports the version from the mvhd atom/box.

ID : 504
Name : 'mvhd atom/box creation time information'
Type : Info
Description : Reports the creation time from the mvhd atom/box.

ID : 505
Name : 'mvhd atom/box modification time information'
Type : Info
Description : Reports the modification time from the mvhd atom/box.

ID : 506
Name : 'mvhd atom/box time scale information'
Type : Info
Description : Reports the time scale from the mvhd atom/box.

ID : 507
Name : 'mvhd atom/box duration information'
Type : Info
Description : Reports the duration from the mvhd atom/box.

ID : 508
Name : 'mvhd atom/box preferred rate information'
Type : Info
Description : Reports the preferred rate from the mvhd atom/box.

ID : 509
Name : 'mvhd atom/box preferred volume information'
Type : Info
Description : Reports the preferred volume from the mvhd atom/box.

ID : 510
Name : 'mvhd atom/box tracks count information'
Type : Info
Description : Reports the tracks count from the mvhd atom/box.

ID : 511
Name : 'QT media duration information'
Type : Info
Description : Reports the QuickTime media duration.

ID : 512
Name : 'hdlr atom/box component subtype information'
Type : Info
Description : Reports the component subtype from hdlr atom/box.

ID : 513
Name : 'hdlr atom/box component manufacturer information'
Type : Info
Description : Reports the component manufacturer from hdlr atom/box.

ID : 514
Name : 'stsd atom/box video descriptors count information'
Type : Info
Description : Reports the video descriptors count from stsd atom/box.

ID : 515
Name : 'video descriptor data format information'
Type : Info
Description : Reports the data format specified in the video descriptor atom/box.

ID : 516
Name : 'video descriptor vendor information'
Type : Info
Description : Reports the vendor specified in the video descriptor atom/box.

ID : 517
Name : 'video descriptor width information'
Type : Info
Description : Reports the width specified in the video descriptor atom/box.

ID : 518
Name : 'video descriptor height information'
Type : Info

Description : Reports the height specified in the video descriptor atom/box.

ID : 519
Name : 'stsd atom/box sound descriptors count information'
Type : Info
Description : Reports the sound descriptors count from stsd atom/box.

ID : 520
Name : 'sound descriptor data format information'
Type : Info
Description : Reports the data format specified in the sound descriptor atom/box.

ID : 521
Name : 'sound descriptor vendor information'
Type : Info
Description : Reports the vendor specified in the sound descriptor atom/box.

ID : 522
Name : 'sound descriptor number of channels information'
Type : Info
Description : Reports the number of channels specified in the sound descriptor atom/box.

ID : 523
Name : 'sound descriptor sample size information'
Type : Info
Description : Reports the sample size specified in the sound descriptor atom/box.

ID : 524
Name : 'sound descriptor sample rate information'
Type : Info

Description : Reports the sample rate specified in the sound descriptor atom/box.

ID : 525
Name : 'stsd atom/box timecode descriptors count information'
Type : Info
Description : Reports the timecode descriptors count specified in the stsd atom/box.

ID : 526
Name : 'timecode descriptor data format information'
Type : Info
Description : Reports the data format specified in the timecode descriptor atom/box.

ID : 527
Name : 'timecode descriptor time scale information'
Type : Info
Description : Reports the time scale specified in the timecode descriptor atom/box.

ID : 528
Name : 'timecode descriptor frame duration information'
Type : Info
Description : Reports the frame duration specified in the timecode descriptor atom/box.

ID : 529
Name : 'timecode descriptor number of frames information'
Type : Info
Description : Reports the number of frames specified in the timecode descriptor atom/box.

ID : 600
Name : 'co64 atom/box entries absence'

Type : Error
Description : Reports absence of entries in the co64 atom/box.

ID : 601
Name : 'co64 atom/box zero entries presence'
Type : Error
Description : Reports presence of entries with zero size in the co64 atom/box.

ID : 602
Name : 'moov and cmov atom/box absence'
Type : Error
Description : Reports absence of moov and cmov atoms in the main atom/box.

ID : 603
Name : 'mvhd atom/box absence'
Type : Error
Description : Reports absence of mvhd atom/box.

ID : 604
Name : 'mdhd atom/box time scale check'
Type : Error
Description : Reports invalid scale value in the mdhd atom/box.

ID : 605
Name : 'mdhd atom/box duration check'
Type : Error
Description : Reports invalid duration value in the mdhd atom/box.

ID : 606
Name : 'minf atom/box absence'
Type : Error
Description : Reports absence of minf atom/box.

ID : 607
Name : 'hdlr atom/box absence'
Type : Warning
Description : Reports absence of hdlr atom/box.

ID : 608
Name : 'tkhd atom/box absence'
Type : Error
Description : Reports absence of tkhd atom/box.

ID : 609
Name : 'mdia atom/box absence'
Type : Error
Description : Reports absence of mdia atom/box.

ID : 610
Name : 'mdat atom/box absence'
Type : Warning
Description : Reports absence of mdat atom/box.

ID : 611
Name : 'trak atom/box absence'
Type : Error
Description : Reports absence of trak atom/box.

ID : 612
Name : 'Media header atom/box absence'
Type : Error
Description : Reports absence of media header atom/box.

ID : 700
Name : 'mvhd atom/box TimeScale check'
Type : Error
Description : Reports invalid TimeScale value specified in the mvhd atom/box.

ID : 701
Name : 'mvhd atom/box Duration check'
Type : Error
Description : Reports invalid Duration value specified in the mvhd atom/box.

ID : 702
Name : 'mvhd atom/box NextTrackID check'
Type : Info
Description : Reports inconsistent track IDs, according to the NextTrackID value specified in the mvhd atom/box.

ID : 703
Name : 'stco atom/box entries absence'
Type : Error
Description : Reports absence of entries in the stco atom/box.

ID : 704
Name : 'stco atom/box zero Chunk Offset entries presence'
Type : Error
Description : Reports presence of invalid zero Chunk Offset entries in the stco atom/box.

ID : 706
Name : 'stsc atom/box entries absence'
Type : Error
Description : Reports absence of entries in the stsc atom/box.

ID : 707
Name : 'stsc atom/box FirstChunk check'
Type : Error
Description : Reports invalid FirstChunk value in the stsc atom/box.

ID : 708

Name : 'stsc atom/box Samples Per Chunk check'
Type : Error
Description : Reports invalid Samples Per Chunk value in the stsc atom/box.

ID : 709
Name : 'stsc atom/box Sample Descriptoion ID check'
Type : Error
Description : Reports invalid Sample Descriptoion ID value in the stsc atom/box.

ID : 710
Name : 'stsd atom/box entries absence'
Type : Error
Description : Reports absence of entries in the stsd atom/box.

ID : 711
Name : 'video descriptor data format presence'
Type : Error
Description : Reports absence of video descriptor data format.

ID : 712
Name : 'video descriptor width check'
Type : Error
Description : Reports invalid width value in the video descriptor atom/box.

ID : 713
Name : 'video descriptor height check'
Type : Error
Description : Reports invalid height value in the video descriptor atom/box.

ID : 714
Name : 'sound descriptor data format presence'
Type : Error
Description : Reports absence of data format in the sound descriptor atom/box.

ID : 715
Name : 'sound descriptor number of channels check'
Type : Warning
Description : Reports invalid number of channels value in the sound descriptor atom/box.

ID : 716
Name : 'sound descriptor sample size check'
Type : Warning
Description : Reports invalid sample size value in the sound descriptor atom/box.

ID : 717
Name : 'sound descriptor sample rate check'
Type : Warning
Description : Reports invalid sample rate value in the sound descriptor atom/box.

ID : 718
Name : 'timecode descriptor data format presence'
Type : Error
Description : Reports absence of data format in the timecode descriptor atom/box.

ID : 719
Name : 'timecode descriptor time scale check'
Type : Error
Description : Reports invalid time scale value in the timecode descriptor atom/box.

ID : 720
Name : 'timecode descriptor frame duration check'
Type : Error

Description : Reports invalid frame duration value in the timecode descriptor atom/box.

ID : 721
Name : 'timecode descriptor number of frames check'
Type : Error
Description : Reports invalid number of frames value in the timecode descriptor atom/box.

ID : 722
Name : 'stss atom/box entries absence'
Type : Error
Description : Reports absence of entries in the stss atom/box.

ID : 723
Name : 'stss atom/box entries check'
Type : Error
Description : Reports invalid entries in the stss atom/box.

ID : 725
Name : 'stsz atom/box sample size entries check'
Type : Error
Description : Reports invalid sample size value entries in the stsz atom/box.

ID : 726
Name : 'stts atom/box entries absence'
Type : Error
Description : Reports absence of entries in the stts atom/box.

ID : 727
Name : 'stts atom/box sample count check'
Type : Error
Description : Reports invalid sample count value in the stts atom/box.

ID : 728

Name : 'stts atom/box sample duration check'
Type : Warning
Description : Reports invalid sample duration value in the stts atom/box.

ID : 729
Name : 'tkhd atom/box TrackID check'
Type : Error
Description : Reports invalid TrackID value in the tkhd atom/box.

ID : 730
Name : 'Atom with zero length check'
Type : Error
Description : Reports invalid zero atom/box length.

ID : 801
Name : 'mehd atom/box completeness'
Type : Error
Description : Reports incomplete mehd atom/box .

ID : 802
Name : 'ssix atom/box completeness'
Type : Error
Description : Reports incomplete ssix atom/box.

ID : 803
Name : 'trex atom/box completeness'
Type : Error
Description : Reports incomplete trex atom/box.

ID : 804
Name : 'tfra atom/box completeness'
Type : Error
Description : Reports incomplete tfra atom/box.

ID : 805

Name : 'mfro atom/box completeness'
Type : Error
Description : Reports incomplete mfro atom/box.

ID : 806
Name : 'mfhd atom/box completeness'
Type : Error
Description : Reports incomplete mfhd atom/box.

ID : 807
Name : 'trun atom/box completeness'
Type : Error
Description : Reports incomplete trun atom/box.

ID : 808
Name : 'sdtp atom/box completeness'
Type : Error
Description : Reports incomplete sdtp atom/box.

ID : 809
Name : 'sbgp atom/box completeness'
Type : Error
Description : Reports incomplete sbgp atom/box.

ID : 810
Name : 'tfdt atom/box completeness'
Type : Error
Description : Reports incomplete tfdt atom/box.

ID : 811
Name : 'sidx atom/box completeness'
Type : Error
Description : Reports incomplete sidx atom/box.

ID : 812

Name : 'saio atom/box completeness'
Type : Error
Description : Reports incomplete saio atom/box.

ID : 813
Name : 'saiz atom/box completeness'
Type : Error
Description : Reports incomplete saiz atom/box.

ID : 814
Name : 'abst atom/box completeness'
Type : Error
Description : Reports incomplete abst atom/box.

ID : 815
Name : 'adaf atom/box completeness'
Type : Error
Description : Reports incomplete adaf atom/box.

ID : 816
Name : 'aeib atom/box completeness'
Type : Error
Description : Reports incomplete aeib atom/box.

ID : 817
Name : 'afra atom/box completeness'
Type : Error
Description : Reports incomplete afra atom/box.

ID : 818
Name : 'afrt atom/box completeness'
Type : Error
Description : Reports incomplete afrt atom/box.

ID : 819

Name : 'amhp atom/box completeness'
Type : Error
Description : Reports incomplete amhp atom/box.

ID : 820
Name : 'amto atom/box completeness'
Type : Error
Description : Reports incomplete amto atom/box.

ID : 821
Name : 'auth atom/box completeness'
Type : Error
Description : Reports incomplete auth atom/box.

ID : 822
Name : 'btrt atom/box completeness'
Type : Error
Description : Reports incomplete btrt atom/box.

ID : 823
Name : 'clap atom/box completeness'
Type : Error
Description : Reports incomplete clap atom/box.

ID : 824
Name : 'clef atom/box completeness'
Type : Error
Description : Reports incomplete clef atom/box.

ID : 825
Name : 'colr atom/box completeness'
Type : Error
Description : Reports incomplete colr atom/box.

ID : 826

Name : 'cprt atom/box completeness'
Type : Error
Description : Reports incomplete cprt atom/box.

ID : 827
Name : 'dscp atom/box completeness'
Type : Error
Description : Reports incomplete dscp atom/box.

ID : 828
Name : 'enof atom/box completeness'
Type : Error
Description : Reports incomplete enof atom/box.

ID : 829
Name : 'esds atom/box completeness'
Type : Error
Description : Reports incomplete esds atom/box.

ID : 830
Name : 'fiel atom/box completeness'
Type : Error
Description : Reports incomplete fiel atom/box.

ID : 831
Name : 'flxs atom/box completeness'
Type : Error
Description : Reports incomplete flxs atom/box.

ID : 832
Name : 'frma atom/box completeness'
Type : Error
Description : Reports incomplete frma atom/box.

ID : 833

Name : 'hmhd atom/box completeness'
Type : Error
Description : Reports incomplete hmhd atom/box.

ID : 834
Name : 'mfra atom/box completeness'
Type : Error
Description : Reports incomplete mfra atom/box.

ID : 835
Name : 'moof atom/box completeness'
Type : Error
Description : Reports incomplete moof atom/box.

ID : 836
Name : 'mvex atom/box completeness'
Type : Error
Description : Reports incomplete mvex atom/box.

ID : 837
Name : 'nmhd atom/box completeness'
Type : Error
Description : Reports incomplete nmhd atom/box.

ID : 838
Name : 'pasp atom/box completeness'
Type : Error
Description : Reports incomplete pasp atom/box.

ID : 839
Name : 'pdin atom/box completeness'
Type : Error
Description : Reports incomplete pdin atom/box.

ID : 840

Name : 'prft atom/box completeness'
Type : Error
Description : Reports incomplete prft atom/box.

ID : 841
Name : 'prof atom/box completeness'
Type : Error
Description : Reports incomplete prof atom/box.

ID : 842
Name : 'schm atom/box completeness'
Type : Error
Description : Reports incomplete schm atom/box.

ID : 843
Name : 'sinf atom/box completeness'
Type : Error
Description : Reports incomplete sinf atom/box.

ID : 844
Name : 'snro atom/box completeness'
Type : Error
Description : Reports incomplete snro atom/box.

ID : 845
Name : 'styp atom/box completeness'
Type : Error
Description : Reports incomplete styp atom/box.

ID : 846
Name : 'tapt atom/box completeness'
Type : Error
Description : Reports incomplete tapt atom/box.

ID : 847

Name : 'tfhd atom/box completeness'
Type : Error
Description : Reports incomplete tfhd atom/box.

ID : 848
Name : 'tims atom/box completeness'
Type : Error
Description : Reports incomplete tims atom/box.

ID : 849
Name : 'titl atom/box completeness'
Type : Error
Description : Reports incomplete titl atom/box.

ID : 850
Name : 'traf atom/box completeness'
Type : Error
Description : Reports incomplete traf atom/box.

ID : 851
Name : 'tsro atom/box completeness'
Type : Error
Description : Reports incomplete tsro atom/box.

ID : 852
Name : 'uuid atom/box completeness'
Type : Error
Description : Reports incomplete uuid atom/box.

ID : 853
Name : 'wave atom/box completeness'
Type : Error
Description : Reports incomplete wave atom/box.

ID : 854

Name : 'chan atom/box completeness'
Type : Error
Description : Reports incomplete chan atom/box.

ID : 855
Name : 'cslg atom/box completeness'
Type : Error
Description : Reports incomplete cslg atom/box.

ID : 856
Name : 'ctab atom/box completeness'
Type : Error
Description : Reports incomplete ctab atom/box.

ID : 857
Name : 'ftab atom/box completeness'
Type : Error
Description : Reports incomplete ftab atom/box.

ID : 858
Name : 'ftyp atom/box completeness'
Type : Error
Description : Reports incomplete ftyp atom/box.

ID : 859
Name : 'gmhd atom/box completeness'
Type : Error
Description : Reports incomplete gmhd atom/box.

ID : 860
Name : 'gmin atom/box completeness'
Type : Error
Description : Reports incomplete gmin atom/box.

ID : 861

Name : 'ilst atom/box completeness'
Type : Error
Description : Reports incomplete ilst atom/box.

ID : 862
Name : 'load atom/box completeness'
Type : Error
Description : Reports incomplete load atom/box.

ID : 863
Name : 'name atom/box completeness'
Type : Error
Description : Reports incomplete name atom/box.

ID : 864
Name : 'pnot atom/box completeness'
Type : Error
Description : Reports incomplete pnot atom/box.

ID : 865
Name : 'tcmi atom/box completeness'
Type : Error
Description : Reports incomplete tcmi atom/box.

ID : 866
Name : 'tmcd atom/box completeness'
Type : Error
Description : Reports incomplete tmcd atom/box.

ID : 867
Name : 'udat atom/box completeness'
Type : Error
Description : Reports incomplete udat atom/box.

ID : 870

Name : 'mehd atom/box version check'
Type : Error
Description : Reports invalid version field in the mehd atom/box.

ID : 871
Name : 'mehd atom/box absence'
Type : Info
Description : Reports absence of mehd atom/box.

ID : 872
Name : 'trex atom/box absence'
Type : Error
Description : Reports absence of trex atom/box.

ID : 873
Name : 'trex atom/box track ID check'
Type : Error
Description : Reports invalid trex atom/box track ID value.

ID : 874
Name : 'tfra atom/box absence'
Type : Warning
Description : Reports absence of tfra atom/box.

ID : 875
Name : 'mfro atom/box absence'
Type : Error
Description : Reports absence of mfro atom/box.

ID : 876
Name : 'tfra atom/box track ID check'
Type : Error
Description : Reports invalid tfra atom/box track ID value.

ID : 877

Name : 'tfra atom/box reserved field check'
Type : Error
Description : Reports invalid tfra atom/box reserved field value.

ID : 878
Name : 'mfhd atom/box absence'
Type : Error
Description : Reports absence of mfhd atom/box.

ID : 879
Name : 'traf atom/box absence'
Type : Warning
Description : Reports absence of traf atom/box.

ID : 880
Name : 'tfhd atom/box absence'
Type : Error
Description : Reports absence of tfhd atom/box.

ID : 881
Name : 'trun atom/box zero samples count check'
Type : Error
Description : Reports missing samples entries in the trun atom/box.

ID : 882
Name : 'trun atom/box zero samples duration check'
Type : Error
Description : Reports samples with zero duration in the trun atom/box.

ID : 883
Name : 'trun atom/box zero samples size check'
Type : Error
Description : Reports samples with zero size in the trun atom/box.

ID : 884

Name : 'sdtp atom/box zero samples count check'
Type : Error
Description : Reports missing samples entries in the sdtp atom/box.

ID : 885
Name : 'sdtp atom/box reserved field check'
Type : Error
Description : Reports invalid reserved field value in the sdtp atom/box.

ID : 886
Name : 'sidx atom/box reference ID check'
Type : Error
Description : Reports invalid reference ID value in the sidx atom/box.

ID : 887
Name : 'sidx atom/box time scale check'
Type : Error
Description : Reports invalid time scale value in the sidx atom/box.

ID : 888
Name : 'sidx atom/box reserved check'
Type : Error
Description : Reports invalid reserved value in the sidx atom/box.

ID : 889
Name : 'sidx atom/box reference count check'
Type : Error
Description : Reports invalid reference entries count in the sidx atom/box.

ID : 890
Name : 'sidx atom/box referenced size check'
Type : Error
Description : Reports invalid referenced entry size in the sidx atom/box.

ID : 891
Name : 'sidx atom/box subsegment duration check'
Type : Error
Description : Reports invalid subsegment duration entry value in the sidx atom/box.

ID : 892
Name : 'saiz atom/box no default and no sample info check'
Type : Error
Description : Reports missing default and sample info table information in the saiz atom/box.

ID : 893
Name : 'saiz atom/box both default and sample info check'
Type : Error
Description : Reports invalid presence of both default and sample info table information in the saiz atom/box.

ID : 894
Name : 'saiz atom/box zero sample info value check'
Type : Error
Description : Reports invalid zero sample info value in the saiz atom/box.

ID : 895
Name : 'mdat atom/box missing for moof atom/box'
Type : Error
Description : Reports missing mdat atom/box for the corresponding moof atom/box in fragmented MP4 and MPEG-DASH MP4 file.

ID : 896
Name : 'moof atom/box missing for mdat atom/box'
Type : Error
Description : Reports missing moof atom/box for the corresponding mdat atom/box in fragmented MP4 and MPEG-DASH MP4 file.

ID : 897
Name : 'tkhd atom/box duration check'
Type : Warning
Description : Reports non-corresponding track header duration with edits or samples duration.

ID : 898
Name : 'trak atom/box chunk overlap check'
Type : Error
Description : Reports overlapped chunks.

6.2. AVC/H.264 Video Stream Validation

AtomBox Studio Pro and Ultimate can perform validation of the AVC/H.264 video elementary stream. Incorrect header structure and errors during decoding process can be detected by this validation module. The supported streams for validation are AVC/H.264 video elementary streams according to the 14496-10 specification. The validation module is provided as a separate option for AtomBox Studio Pro and is included in AtomBox Studio Ultimate.

The following validation checks are available for this module:

ID : 101
Name : 'Start validation information'
Type : Info
Description : Reports information on file validation start.

ID : 102
Name : 'Loading file information'
Type : Info
Description : Reports information on file load.

ID : 103
Name : 'Unloading file information'
Type : Info
Description : Reports information on file unload.

ID : 104
Name : 'Loading timeout'
Type : Error
Description : Reports load timeout if the loading time is greater than the maximum loading time specified in the main property page of the validation module.

ID : 105
Name : 'Unloading timeout'
Type : Error
Description : Reports unload timeout if the unloading time is greater than the maximum unloading time specified in the main property page of the validation module.

ID : 106
Name : 'Play timeout'
Type : Error
Description : Reports validation start timeout.

ID : 107
Name : 'Stop timeout'
Type : Error
Description : Reports validation stop timeout.

ID : 108
Name : 'Finish validation information'
Type : Info
Description : Reports information on file validation finish.

ID : 201
Name : 'Corrupted Video Frames'
Type : Error
Description : Reports the count of the corrupted AVC/H.264 video frames, if any.

ID : 202
Name : 'Valid Video Frame Width'
Type : Error
Description : Reports invalid video resolution width.

ID : 203
Name : 'Valid Video Frame Height'
Type : Error
Description : Reports invalid video resolution height.

ID : 204
Name : 'Changing Video Frame Width'
Type : Warning
Description : Reports video resolution width value change throughout the AVC/H.264 video elementary stream.

ID : 205
Name : 'Changing Video Frame Height'
Type : Warning
Description : Reports video resolution height value change throughout the AVC/H.264 video elementary stream.

ID : 206
Name : 'Valid Video Frames Per Second'
Type : Error
Description : Reports invalid video Frames Per Second value.

ID : 207
Name : 'Changing Video Frames Per Second'

Type : Warning
Description : Reports changing video Frames Per Seconds value throughout the AVC/H.264 video elementary stream.

ID : 208
Name : 'Changing Field Order'
Type : Warning
Description : Reports changing field order value throughout the AVC/H.264 video elementary stream.

ID : 209
Name : 'Changing Picture Structure'
Type : Warning
Description : Reports changing picture structure value throughout the AVC/H.264 video elementary stream.

ID : 401
Name : 'Video Frame Width Information'
Type : Info
Description : Reports video resolution width value.

ID : 402
Name : 'Video Frame Height Information'
Type : Info
Description : Reports video resolution height value.

ID : 403
Name : 'Video Frames Per Second Information'
Type : Info
Description : Reports video Frames Per Second value.

ID : 404
Name : 'Video Frame Picture Structure Information'
Type : Info
Description : Reports video frame picture structure value.

ID : 405
Name : 'Video Frame Top Field First Information'
Type : Info
Description : Reports the Top Field First value.

ID : 501
Name : 'Video Decoded Frames Count Information'
Type : Info
Description : Reports the count of the successfully decoded AVC/H.264 video frames in the video elementary stream.

ID : 502
Name : 'Video Corrupted Frames Count Information'
Type : Info
Description : Reports the count of the corrupted AVC/H.264 video frames in the video elementary stream.

ID : 503
Name : 'AVC/H.264 Stream Index To Validate Information'
Type : Info
Description : Reports the stream index of the AVC/H.264 video elementary stream in case of multiplexed media file.

ID : 504
Name : 'AVC/H.264 Program ID To Validate Information'
Type : Info
Description : Reports the program ID of the AVC/H.264 video elementary stream in case of multiplexed media file.

ID : 505
Name : 'AVC/H.264 Stream ID To Validate Information'
Type : Info
Description : Reports the stream ID of the AVC/H.264 video elementary stream in case of multiplexed media file.

ID : 506
Name : ' Demo Restrictions Information'
Type : Info
Description : Reports the demo restrictions in case of trail mode.

ID : 507
Name : ' Video Processed Frames Count Information'
Type : Info
Description : Reports the video processed frames count. The processed frames count is the sum of all video frames – valid and invalid.

ID : 509
Name : ' Average Bitrate Information'
Type : Info
Description : Reports the average bitrate of the video stream.

ID : 510
Name : 'Minimum bitrate Information'
Type : Info
Description : Reports the minimum bitrate of the video stream.

ID : 511
Name : 'Maximum bitrate Information'
Type : Info
Description : Reports the maximum bitrate of the video stream.

ID : 512
Name : 'Minimum Number Of Frames In GOP Information'
Type : Info
Description : Reports the minimum number of frames in GOP.

ID : 513
Name : 'Maximum Number Of Frames In GOP Information'
Type : Info

Description : Reports the maximum number of frames in GOP.

ID : 514
Name : ' Total Frames Count Information'
Type : Info
Description : Reports the total number of parsed frames in the stream.

ID : 515
Name : ' Total GOPs Count Information'
Type : Info
Description : Reports the total number of parsed GOPs in the stream.

ID : 516
Name : 'Minimum GOP Size Information'
Type : Info
Description : Reports the size in bytes of the smallest GOP in the stream.

ID : 517
Name : 'Maximum GOP Size Information'
Type : Info
Description : Reports the size in bytes of the biggest GOP in the stream.

ID : 518
Name : 'Profile Information'
Type : Info
Description : Reports the AVC/H.264 Profile information.

ID : 519
Name : 'Level Information'
Type : Info
Description : Reports the AVC/H.264 Level information.

ID : 520
Name : ' Initial SPS Information'
Type : Info

Description : Reports the initial AVC/H.264 SPS structure.

ID : 521
Name : ' Initial PPS Information'
Type : Info
Description : Reports the initial AVC/H.264 PPS structure.

6.3. MPEG-2 Video Stream Validation

AtomBox Studio Pro and Ultimate can perform validation of MPEG-2 video elementary stream. Incorrect header structure and errors during the decoding process can be detected by this validation module. The supported MPEG streams are MPEG-2 video elementary streams compliant with the ISO/IEC 13818-2 specification. The validation module is provided as a separate option for AtomBox Studio Pro and is included in AtomBox Studio Ultimate.

The following validation checks are available for this module:

ID : 101
Name : 'Start validation information'
Type : Info
Description : Reports information on file validation start.

ID : 102
Name : 'Loading file information'
Type : Info
Description : Reports information on file load.

ID : 103
Name : 'Unloading file information'
Type : Info
Description : Reports information on file unload.

ID : 104
Name : 'Loading timeout'
Type : Error
Description : Reports load timeout if the loading time is greater than the maximum loading time specified in the main property page of the validation module.

ID : 105
Name : 'Unloading timeout'
Type : Error
Description : Reports unload timeout if the unloading time is greater than the maximum unloading time specified in the main property page of the validation module.

ID : 106
Name : 'Play timeout'
Type : Error
Description : Reports validation start timeout.

ID : 107
Name : 'Stop timeout'
Type : Error
Description : Reports validation stop timeout.

ID : 108
Name : 'Finish validation information'
Type : Info
Description : Reports information on file validation finish.

ID : 201
Name : 'Corrupted Video Frame Number'
Type : Error
Description : Reports each corrupted MPEG-2 video frame number.

ID : 202

Name : 'Valid Video Frame Width'
Type : Error
Description : Reports invalid resolution video frame width value.

ID : 203
Name : 'Valid Video Frame Height'
Type : Error
Description : Reports invalid resolution video frame height value.

ID : 204
Name : 'Changing Video Frame Width'
Type : Warning
Description : Reports changing video frame width value throughout the video elementary stream.

ID : 205
Name : 'Changing Video Frame Height'
Type : Warning
Description : Reports changing video frame height value throughout the video elementary stream.

ID : 206
Name : 'Valid Video Frames Per Second'
Type : Error
Description : Reports invalid video Frames Per Second value.

ID : 207
Name : 'Changing Video Frames Per Second'
Type : Warning
Description : Reports changing video Frames Per Seconds value throughout the video elementary stream.

ID : 209
Name : 'Changing Picture Structure'
Type : Warning

Description : Reports changing video frame picture structure value throughout the video elementary stream.

ID : 210
Name : 'Incorrect Slice Count'
Type : Error
Description : Reports incorrect slices count as per reported video stream resolution.

ID : 211
Name : 'Duplicate Frame In GOP'
Type : Error
Description : Reports duplicate frame number in a GOP.

ID : 212
Name : 'Invalid GOP'
Type : Error
Description : Reports invalid Group Of Pictures in respect of the frames/fields numbering.

ID : 213
Name : 'Sequence Header : Aspect Ratio Information Field Check'
Type : Error
Description : Reports invalid Aspect Ration value in the Sequence Header.

ID : 214
Name : 'Sequence Header : Frame Rate Code Field Check'
Type : Error
Description : Reports invalid Frame Rate Code value in the Sequence Header.

ID : 215
Name : 'Sequence Header : Marker Bit Field Check'
Type : Warning
Description : Reports invalid Marker Bit value in the Sequence Header.

ID : 216
Name : 'Sequence Extension : Profile Field Check'
Type : Error
Description : Reports invalid Profile value in the Sequence Extension.

ID : 217
Name : 'Sequence Extension : Level Field Check'
Type : Error
Description : Reports invalid Level value in the Sequence Extension.

ID : 218
Name : 'Sequence Extension : Chroma Format Field Check'
Type : Error
Description : Reports invalid Chroma Format value in the Sequence Extension.

ID : 219
Name : 'Picture Header : Picture Coding Type Field Check'
Type : Error
Description : Reports invalid Picture Coding Type value in the Picture Header.

ID : 220
Name : 'Picture Extension : Picture Structure Field Check'
Type : Error
Description : Reports invalid Picture Structure value in the Picture Extension.

ID : 401
Name : 'Video Frame Width Information'
Type : Info
Description : Reports video frame width value.

ID : 402

Name : 'Video Frame Height Information'
Type : Info
Description : Reports video frame height value.

ID : 403
Name : 'Video Frames Per Second Information'
Type : Info
Description : Reports video Frames Per Seconds value.

ID : 404
Name : 'Video Frame Picture Structure Information'
Type : Info
Description : Reports video frame Picture Structure value.

ID : 405
Name : 'Video Frame Top Field First Information'
Type : Info
Description : Reports video frame Top Field First value.

ID : 501
Name : ' GOPs Count Information'
Type : Info
Description : Reports the total Group Of Pictures count.

ID : 502
Name : 'Video Decoded Frames Count Information'
Type : Info
Description : Reports the successfully decoded video frames count.

ID : 503
Name : 'Video Corrupted Frames Count Information'
Type : Info
Description : Reports the total corrupted video frames count.

ID : 504

Name : 'Stream Index To Validate Information'
Type : Info
Description : Reports the stream index of the elementary stream, which is being validated, in case of multiplexed media file.

ID : 505
Name : 'Program ID To Validate Information'
Type : Info
Description : Reports the program ID of the elementary stream, which is being validated, in case of multiplexed media file.

ID : 506
Name : 'Stream ID To Validate Information'
Type : Info
Description : Reports the stream ID of the elementary stream, which is being validated, in case of multiplexed media file.

ID : 507
Name : ' Demo Restrictions Information'
Type : Info
Description : Reports the demo restrictions in case of trail mode.

ID : 508
Name : ' Video Processed Frames Count Information'
Type : Info
Description : Reports the video processed frames count. The processed frames count is the sum of all video frames – valid and invalid.

ID : 509
Name : 'Initial Sequence Header Information'
Type : Info
Description : Reports the initial Sequence Header information.

ID : 510
Name : 'Initial Sequence Extension Information'

Type : Info
Description : Reports the initial Sequence Extension information.
ID : 511
Name : 'Initial GOP Header Information'
Type : Info
Description : Reports the initial GOP Header information.

ID : 512
Name : 'Initial Picture Header Information'
Type : Info
Description : Reports the initial Picture Header information.

ID : 513
Name : 'Initial Picture Coding Extension Information'
Type : Info
Description : Reports the initial Picture Coding Extension information.

6.4. MPEG-4 Video Stream Validation

AtomBox Studio Pro and Ultimate can perform validation of MPEG-4 video elementary stream. Incorrect header structure and errors during the decoding process can be detected by this validation module. The supported MPEG streams are MPEG-4 video elementary streams compliant with the ISO/IEC 14496-2 specification. The validation module is provided as a separate option for AtomBox Studio Pro and is included in AtomBox Studio Ultimate.

The following validation checks are available for this module:

ID : 101
Name : 'Start validation information'
Type : Info
Description : Reports information on file validation start.

ID : 102
Name : 'Loading file information'
Type : Info
Description : Reports information on file load.

ID : 103
Name : 'Unloading file information'
Type : Info
Description : Reports information on file unload.

ID : 104
Name : 'Loading timeout'
Type : Error
Description : Reports load timeout if the loading time is greater than the maximum loading time specified in the main property page of the validation module.

ID : 105
Name : 'Unloading timeout'
Type : Error
Description : Reports unload timeout if the unloading time is greater than the maximum unloading time specified in the main property page of the validation module.

ID : 106
Name : 'Play timeout'
Type : Error
Description : Reports validation start timeout.

ID : 107
Name : 'Stop timeout'
Type : Error
Description : Reports validation stop timeout.

ID : 108
Name : 'Finish validation information'
Type : Info
Description : Reports information on file validation finish.

ID : 201
Name : 'Corrupted Video Frame Number'
Type : Error
Description : Reports each corrupted MPEG-4 video frame number.

ID : 202
Name : 'Valid Video Frame Width'
Type : Error
Description : Reports invalid video frame width value.

ID : 203
Name : 'Valid Video Frame Height'
Type : Error
Description : Reports invalid video frame height value.

ID : 204
Name : 'Changing Video Frame Width'
Type : Warning
Description : Reports changing video frame width value throughout the video elementary stream.

ID : 205
Name : 'Changing Video Frame Height'
Type : Warning
Description : Reports changing video frame height value throughout the video elementary stream.

ID : 206
Name : 'Valid Video Frames Per Second'

Type : Error
Description : Reports invalid video Frames Per Second value.

ID : 207
Name : 'Changing Video Frames Per Second'
Type : Warning
Description : Reports changing video Frames Per Second throughout the video elementary stream.

ID : 208
Name : 'Changing Field Order'
Type : Warning
Description : Reports changing video frame Field Order value throughout the video elementary stream.

ID : 401
Name : 'Video Frame Width Information'
Type : Info
Description : Reports the video frame width value of the stream.

ID : 402
Name : 'Video Frame Height Information'
Type : Info
Description : Reports the video frame height value of the stream.

ID : 403
Name : 'Video Frames Per Second Information'
Type : Info
Description : Reports the video Frames Per Second value of the stream.

ID : 404
Name : 'Video Frame Picture Structure Information'
Type : Info
Description : Reports the video frame Picture Structure value of the stream.

ID : 405
Name : 'Video Frame Top Field First Information'
Type : Info
Description : Reports the video frame Top Field First value of the stream.

ID : 501
Name : 'Video Decoded Frames Count Information'
Type : Info
Description : Reports the successfully decoded video frames count.

ID : 502
Name : 'Video Corrupted Frames Count Information'
Type : Info
Description : Reports the corrupted video frames count.

ID : 503
Name : 'Stream Index To Validate Information'
Type : Info
Description : Reports the stream index of the elementary stream, which is being validated, in case of multiplexed media file.

ID : 504
Name : 'Program ID To Validate Information'
Type : Info
Description : Reports the program ID of the elementary stream, which is being validated, in case of multiplexed media file.

ID : 505
Name : 'Stream ID To Validate Information'
Type : Info
Description : Reports the stream ID of the elementary stream, which is being validated, in case of multiplexed media file.

ID : 506
Name : ' Demo Restrictions Information'

Type : Info
Description : Reports the demo restrictions in case of trail mode.

ID : 507
Name : ' Video Processed Frames Count Information'
Type : Info
Description : Reports the video processed frames count. The processed frames count is the sum of all video frames – valid and invalid.

6.5. AAC Audio Stream Validation

AtomBox Studio Pro and Ultimate can perform validation of the ADTS AAC audio streams. Incorrect header structure can be detected by this validation module. The supported AAC streams are AAC elementary streams with ADTS headers according to the ISO/IEC 13818-7 specification. The validation module is provided as a separate option for AtomBox Studio Pro and is available in AtomBox Studio Ultimate.

The following validation checks are available for this module:

ID : 101
Name : 'Start validation information'
Type : Info
Description : Reports information on file validation start.

ID : 102
Name : 'Loading file information'
Type : Info
Description : Reports information on file load.

ID : 103
Name : 'Unloading file information'
Type : Info

Description : Reports information on file unload.

ID : 104
Name : 'Loading timeout'
Type : Error
Description : Reports load timeout if the loading time is greater than the maximum loading time specified in the main property page of the validation module.

ID : 105
Name : 'Unloading timeout'
Type : Error
Description : Reports unload timeout if the unloading time is greater than the maximum unloading time specified in the main property page of the validation module.

ID : 106
Name : 'Play timeout'
Type : Error
Description : Reports validation start timeout.

ID : 107
Name : 'Stop timeout'
Type : Error
Description : Reports validation stop timeout.

ID : 108
Name : 'Finish validation information'
Type : Info
Description : Reports information on file validation finish.

ID : 201
Name : 'Corrupted Audio Frame Number'
Type : Error
Description : Reports each corrupted AAC audio frame number.

ID : 204
Name : 'Changing Protection'
Type : Warning
Description : Reports changing Protection Absent bit value throughout the AAC audio elementary stream.

ID : 206
Name : 'Changing Audio Profile'
Type : Warning
Description : Reports changing Profile value throughout the AAC audio elementary stream.

ID : 208
Name : 'Changing Audio Frequency'
Type : Warning
Description : Reports changing Audio Frequency value throughout the AAC audio elementary stream.

ID : 209
Name : 'Valid Audio Channels Configuration'
Type : Error
Description : Reports invalid audio Channels Configuration value.

ID : 210
Name : 'Changing Audio Channels Configuration'
Type : Warning
Description : Reports changing audio Channel Configuration value throughout the AAC audio elementary stream.

ID : 211
Name : 'Changing Copyright Bit'
Type : Warning
Description : Reports changing Copyright bit value throughout the AAC audio elementary stream.

ID : 212
Name : 'Changing Home Bit'
Type : Warning
Description : Reports changing Home bit value throughout the AAC audio elementary stream.

ID : 213
Name : 'Junk At The End Of File Bytes'
Type : Warning
Description : Reports junk data block at the end of the AAC audio elementary stream. The report includes the size of the junk data block.

ID : 214
Name : 'Junk Bytes'
Type : Warning
Description : Reports Junk data block in the AAC audio elementary stream.

ID : 401
Name : 'Audio Profile'
Type : Info
Description : Reports the audio Profile value of the AAC audio elementary stream.

ID : 402
Name : 'Audio Frequency'
Type : Info
Description : Reports the audio Frequency value of the AAC audio elementary stream.

ID : 403
Name : 'Audio Channels Configuration'
Type : Info
Description : Reports the audio Channel Configuration value of the AAC audio elementary stream.

ID : 501
Name : 'Audio Decoded Frames Count Information'
Type : Info
Description : Reports the count of the successfully decoded AAC audio frames.

ID : 502
Name : 'Audio Corrupted Frames Count Information'
Type : Info
Description : Reports the count of the corrupted AAC audio frames.

ID : 503
Name : 'AAC Stream Index To Validate Information'
Type : Info
Description : Reports the stream index of the AAC audio elementary stream, which is being validated in case of multiplexed media file.

ID : 504
Name : 'AAC Program ID To Validate Information'
Type : Info
Description : Reports the program ID of the AAC audio elementary stream, which is being validated in case of multiplexed media file.

ID : 505
Name : 'AAC Stream ID To Validate Information'
Type : Info
Description : Reports the stream ID of the AAC audio elementary stream, which is being validated in case of multiplexed media file.

ID : 506
Name : 'Audio Parsed Frames Count Information'
Type : Info
Description : Reports the count of the parsed AAC audio frames in the elementary stream.

ID : 507
Name : 'Audio Total Frames With Errors Count Information'
Type : Info
Description : Reports the count of the total frames with errors.

ID : 508
Name : ' Demo Restrictions Information'
Type : Info
Description : Reports the 30 seconds limitation in case of trial mode of the validation module.

ID : 509
Name : ' Average Bitrate Information'
Type : Info
Description : Reports the average bitrate of the audio stream.

ID : 510
Name : 'Minimum bitrate Information'
Type : Info
Description : Reports the minimum bitrate of the audio stream.

ID : 511
Name : 'Maximum bitrate Information'
Type : Info
Description : Reports the maximum bitrate of the audio stream.

ID : 512
Name : ' Average Framesize Information'
Type : Info
Description : Reports the average audio frame size.

ID : 513
Name : ' Minimum Framesize Information'
Type : Info

Description : Reports the minimum audio frame size.

ID : 514
Name : ' Maximum Framesize Information'
Type : Info
Description : Reports the maximum audio frame size.

ID : 515
Name : ' File Duration Information'
Type : Info
Description : Reports the file duration.

ID : 516
Name : 'Initial ADTS Frame Information'
Type : Info
Description : Reports the initial AAC ADTS frame information.